

## JASON PHILIP KAYE

Assistant Professor of Soil Biogeochemistry, The Pennsylvania State University  
Department of Crop and Soil Sciences, 116 ASI Building, University Park, PA 16802  
jpk12@psu.edu; 814-863-1614; fax 814-863-7043

### RESEARCH INTERESTS

Terrestrial biogeochemistry; ecosystem consequences of land-use change and other environmental change; nitrogen and carbon dynamics; plant-soil interactions; stable isotopes; coupled social-ecological systems.

### EDUCATION

Ph.D. 2000. Colorado State University, Ecology  
M.S. 1997. Northern Arizona University, Forestry, with Honors  
B.A. 1993. University of Virginia, Chemistry, with Distinction

### RESEARCH EXPERIENCE

2005- Assistant Professor of Soil Biogeochemistry, Dept. of Crop and Soil Sci., Penn. State Univ.  
2002-2005 Assistant Professor, School of Life Sciences, Arizona State Univ.  
2000-2002 USDA Postdoctoral Research Fellow, Department of Forest Sciences, Colorado State Univ.  
1997-2000 Grad. Research Assistant, Graduate Degree Program in Ecology, Colorado State Univ.  
1995-1997 Grad. Research Assistant, School of Forestry, Northern Arizona Univ.  
1993-1994 Research Assistant, Harvard Forest LTER, Harvard Univ.  
1992 Research Assistant, Virginia Coastal Reserve LTER, Univ. of Virginia.

### PEER REVIEWED RESEARCH ARTICLES (my students are underlined>)

- Castellano, M.C. and **J.P. Kaye**. In press. Global within-site variance in soil solution nitrogen and hydraulic conductivity are correlated with clay content. *Ecosystems*.
- Dore, S., T. Kolb, M. Montes-Helu, S. Eckert, B. Sullivan, B. Hungate, **J.P. Kaye**, S. Hart, G. Koch, A. Finkral. In press. Carbon and water fluxes from ponderosa pine forests disturbed by wildfire and thinning. *Ecological Applications*.
- Fricks, B., **J.P. Kaye**, and R. Seidel. 2009. Abiotic NO<sub>3</sub><sup>-</sup> retention in forest and agroecosystems. *Soil Science Society of America Journal* 73:1137-1141
- McCrackin, M. T.K. Harms, N.B. Grimm, S.J. Hall and **J.P. Kaye**. 2008. Responses of soil microorganisms to resource availability in urban, desert soils. *Biogeochemistry*: In press.
- Sullivan, B.W., T.E. Kolb, S.C. Hart, **J.P. Kaye**, S. Dore, and M. Montes-Helu. 2008. Thinning reduces soil carbon dioxide but not methane flux from southwestern USA ponderosa pine forests. *Forest Ecology and Management* 255: 4047-4055.
- Morehouse, K.H., T. Johns, T., **J.P. Kaye**, and M.W. 2008. Biogeochemical consequences of bark beetle outbreaks in southwestern ponderosa pine forests. *Forest Ecology and Management* 255:2698-2708.
- Dore, S., T.E. Kolb, M. Montes-Helu, B.W. Sullivan, W.D. Winslow, S.C. Hart, **J.P. Kaye**, G.W. Koch, B. A. Hungate. 2008. Long-term impact of a stand-replacing fire on ecosystem CO<sub>2</sub> exchange of a ponderosa pine forest. *Global Change Biology* 14: 1801-1820.
- Majumdar, A., **J.P. Kaye**, C. Gries, D. Hope, R. Burdick, and N. Grimm. 2008. Hierarchical spatial modeling of multivariate soil nutrient concentrations in heterogeneous land-use patches of the Phoenix metropolitan area. *Communications in Statistics—Simulation and Computation* 37: 434–453.
- Kaye, J.P.**, Majumdar, A., Gries, C., Hope, D., Grimm, N., Zhu, W., Baker, L. 2008. The spatial distribution of C, N, and P in a region of mixed urban, desert, and agricultural land use. *Ecological Applications* 18:132-145.

- Oleson, J., Hope, D., Gries, C., and **J.P. Kaye**. 2006. A Bayesian approach to estimating regression coefficients for soil properties in land-use patches with varying degrees of spatial variation. *Environmetrics* 17: 517-525.
- Lewis, D., **J.P. Kaye**, C. Gries, A. Kinzig, and C. Redman. 2006. Agrarian legacy in soils of urbanizing aridlands. *Global Change Biology* 12: 703-709.
- Kaye, J.P.**, P. Groffman, N.B. Grimm, L. Baker, and R. Pouyat. 2006. A distinct urban biogeochemistry? *Trends in Ecology and Evolution* 21:192-199.
- Hope, D., W. Zhu, C. Gries, J. Oleson, **J.P. Kaye**, N.B. Grimm, and L. Baker. 2005. Spatial variation in inorganic soil nitrogen across an arid urban ecosystem. *Urban Ecosystems* 8:251-273.
- Kaye, J.P.**, S.C. Hart, P.Z. Fule, W.W. Covington, M.M. Moore, and M.W. Kaye. 2005. Initial carbon, nitrogen, and phosphorus fluxes following ponderosa pine restoration treatments. *Ecological Applications* 15: 1581-1593.
- Boyle, S., S.C. Hart, **J.P. Kaye**, and M. Waldrop. 2005. Ecological restoration and canopy type influence soil microflora in a Ponderosa pine forest. *Soil Sci. Society of America Journal* 69:1627–1638.
- Kaye, J.P.**, R. McCulley, and I.C. Burke. 2005. Carbon fluxes, nitrogen cycling and soil microorganisms in adjacent urban, native and agricultural ecosystems. *Global Change Biology* 11:575-587.
- Binkley, D., G. Ice, **J.P. Kaye**, and C. Williams. 2004. Patterns of variation in nitrogen and phosphorus concentrations in forest streams of the United States. *Journal of the American Water Resources Association* 40:1277-1291.
- Binkley, D., **J.P. Kaye**, M. Barry, and M. Ryan. 2004. First rotation changes in soil carbon and nitrogen in a *Eucalyptus* plantation in Hawaii. *Soil Science Society of America Journal* 68:1713–1719.
- Kaye, J.P.**, I.C. Burke, A. Mosier, and J.P. Guerchman. 2004. Methane and nitrous oxide fluxes from urban soils to the atmosphere. *Ecological Applications* 14:975–981.
- Kaye, J.P.**, D. Binkley, and C. Rhoades. 2003. Stable nitrogen accumulation and flexible organic matter stoichiometry during primary floodplain succession. *Biogeochemistry* 63:1-22.
- Kaye, J.P.**, D. Binkley, X. Zou, and J. Parrotta. 2002. Retention of <sup>15</sup>nitrogen in non-labile soil pools beneath three tree species in a tropical plantation. *Soil Sci. Soc. America Journal* 66:612–619.
- Kaye, J.P.**, J.E. Barrett, and I.C. Burke. 2002. Stable carbon and nitrogen pools in grassland soils of variable texture and carbon content. *Ecosystems* 5: 461-471.
- Kaye, J.P.**, S.C. Resh, M.W. Kaye, and R. Chimner. 2000. Nutrient and carbon dynamics in a replacement series of *Eucalyptus* and *Albizia* trees. *Ecology* 81:3267-3273.
- Kaye, J.P.**, S.C. Hart, R.C. Cobb, and J. Stone. 1999. Water and nutrient outflow following ecological restoration of a ponderosa pine/bunchgrass ecosystem. *Restoration Ecology* 7:252-261.
- Boone, R.D., K.J. Nadelhoffer, J.D. Canary, and **J.P. Kaye**. 1998. Roots determine the temperature sensitivity of soil respiration. *Nature (London)* 396:570-572.
- Kaye, J.P.** and S.C. Hart. 1998. Effects of canopy type and restoration on soil respiration in a ponderosa pine-bunchgrass ecosystem. *Soil Science Society of America Journal* 62:1062-1072.
- Kaye, J.P.** and S.C. Hart. 1998. Ecological restoration alters N transformations in a ponderosa pine-bunchgrass ecosystem. *Ecological Applications* 8:1052-1060.
- Kaye, J.P.** and S.C. Hart 1997. Competition for nitrogen between plants and soil microorganisms. *Trends in Ecology and Evolution* 12:139-143.

#### **PEER REVIEWED BOOK CHAPTERS**

- Burke, I.C., P.B. Hook, D.G. Milchunas, J.E. Barrett, M.A. Vinton, R.L. McCulley, **J.P. Kaye**, R.A. Gill, H.E. Epstein, R.H. Kelly, W.J. Parton, A.R. Mosier, and C.M. Yonker. 2008. Biogeochemistry of soil organic matter and nutrient dynamics of shortgrass steppe ecosystems. *In: W. Lauenroth and I. Burke (eds.), Ecology of the Shortgrass Steppe: Perspectives from Long-Term Research.* Oxford University Press
- Nadelhoffer, K.J., R.D. Boone, R.D. Bowden, J.D. Canary, **J.P. Kaye**, P. Micks, A. Ricca, J.A. Aitkenhead, K. Lajtha, and W.H. McDowell. 2004. The DIRT experiment: Litter and root

influences on forest soil organic matter stocks and function. *In: D. Foster and J. Aber (eds.), Forests in Time. Synthesis Volume of the Harvard Forest LTER Program.* Yale University Press.

Burke, I.C., **J.P. Kaye**, S.P. Bird, S.A. Hall, R.L. McCulley, and G.L. Sommerville. 2003. Evaluating and testing models of terrestrial biogeochemistry: The role of temperature in controlling decomposition. Pp. 225-253. *In: Canham, C.D., J.J. Cole, and W.K. Lauenroth, editors. Models in Ecosystem Science.* Princeton (NJ): Princeton University Press.

## **FUNDED GRANTS**

- 6/2009-5/1010: Advisor of lead-PI, NSF-DEB-Ecosystem Studies. Dissertation Research: Nitrogen transformation and transport along a soil texture gradient. With M. Castellano (Ph.D. student and Lead-PI and H. Lin (co-PI).
- 7/2008-6/2012: Lead-PI, NSF-DEB-Ecosystem Studies. Testing a conceptual model of the terrestrial nitrogen cycle including rapid stabilization of nitrogen in soil, with C.E. Martinez and J. Ewing.
- 7/2007-6/2012: Co-PI, NSF Critical Zone Observatory Network. Regolith & the Critical Zone in the Susquehanna River Basin: The Shale Experiment, with Chris Duffy and many Co-PIs.
- 10/2007-9/2011: Co-PI, USDA NRI. Transitions to Prosperity and Sustainability: Enhancing Small and Medium-Sized Farms in the Rural Exurban-Urban Transitional Zone, with J. Findeis (PD), D. Mortensen, R. Stedman, K. Brazier, and D. Miller.
- 10/2007-9/2011: Co-PI, USDA RAMP Weed management, environmental quality and profitability in organic feed and forage production systems, with M. Barbercheck, D. Mortensen, J. Harper, and N.E. Kiernan.
- 7/2007-6/2010: Co-PI, NOAA-NERRS Graduate Research Fellowship Program. Using soil properties as a framework for understanding nutrient transport and transformation at the terrestrial-aquatic estuarine interface. To Mike Castellano (Ph.D. Student) with J. Kaye (Advisor) and H. Lin (co-Advisor) as Co-PIs.
- 9/2007-8/2010: Co-PI, DOE NICCR. Northeastern forest regeneration in warmer and wetter climate, with M. Kaye and M. Abrams.
- 4/2005-3/2009: Sole-PI, The Andrew Mellon Foundation. A new conceptual model of the terrestrial N cycle based on rapid uptake of N into stable soil organic matter.
- 4/2005-12/2009: Lead-PI, NSF-DEB-Ecosystem Studies. Collaborative Research: Ecosystem responses to nutrient deposition from the urban atmosphere; with N. Grimm, S.H. Hall, and J. Allen.
- 10/2006-9/2008; Co-PI, USDA/USDI Joint Fire Sciences, Modeling forest change and management alternatives on a restored landscape, with P. Fule and W. Covington..
- 8/2005-7/2008: Lead-PD, USDA NRI Competitive Grants, Managed Ecosystems: Fire management and carbon storage in Southwestern ponderosa pine forests, with S. Hart, P. Fule, S. Haase, K. Prewitt, and M. Kaye.
- 9/2005-8/2008; Co-PI, USDA National Needs Fellowships in Integrated Soil and Water Sciences, with H. Lin, T. Wagener, J. Shortle, and G. Petersen..
- 11/2005-6/2006; Co-PI, PSU CAS Seed Grant, Coupled Soil Hydrologic and Biogeochemical Dynamics at Multiple Scales - A Preliminary Investigation, with H. Lin, and M.A. Bruns..
- 8/2005-7/2007: Co-PD, USDA NRI Special Research Grants: Improved Dairy Management Practices. Integrated Strategies for Reducing Gas Emissions from Dairy Farms, with T. Richard, E. Wheeler, G. Varga, and M. Bruns..
- 9/2004-8/2007: co-PI, USDA/NASA/DOE Carbon Cycle Science Program. Carbon dioxide and methane fluxes in disturbed southwestern ponderosa pine forests, with T. Kolb, G.W. Koch, B. Hungate, and S.C. Hart..
- 11/2004-10/2010: co-PI, NSF-DEB-Long-Term Studies. Central Arizona Phoenix LTER: Phase 2, with N. Grimm, C. Redman, and 23 other co-PIs.

- 1/2004-12/2004: lead PI, College of Liberal Arts and Sciences, ASU. Developing a collaborative research initiative in ponderosa pine forest ecology at ASU, with M.W. Kaye, and J. Sabo..
- 9/2003-8/2005: co-PI, NSF Biocomplexity in the Environment, Coupled Biogeochemical Cycles. Coupled biogeochemical cycles in urban and agricultural ecosystems: role of hydrology, stoichiometry, spatial linkages, and human behavior; with P. Brezonik, L. Baker, S. Hobbie, J. King, D. Mulla, M. Bauer, and D. Hope.
- 3/2003-8/2004: co-PI, Office of the Vice Provost for Research, ASU. Pilot socio-ecological research project at Agua Fria National Monument, with K. Spielmann and 7 co-PIs.
- 10/2002-9/2005: sole PI, NSF International Studies. Fire management and carbon storage in Spain and the United States.
- 5/2001-4/2003: co-PI, Ecological Restoration Institute. Long-term effects of restoration on the function of a ponderosa pine-bunchgrass ecosystem, with S.C. Hart.
- 8/2000-7/2002: sole PI, USDA NRI Competitive Grants, Managed Ecosystems. Land-use change in central Colorado: Ecosystem consequences of urbanization.

### PRESENTATIONS AT CONFERENCES

- Findeis, J.L., J. Bishop, K. Brasier, B. Demeke, J. Kaye, D. Miller, D. Mortensen, R. Stedman, R. Salcedo Du Bois, and S. Li. 2008. Human Population Dispersion and the Structure of Agriculture in the Susquehanna Rural-Exurban-Urban Transition Zone (T-Zone). Rural Sociological Society, Manchester, NH. July.
- Castellano, M.J. and **J.P. Kaye**. 2008. Variation in soil solution nitrogen is a function of clay content. 1<sup>st</sup> International Hydrogeology Conference, University Park, July.
- Castellano, M.J., C. Walker, J. Schmidt, **J.P. Kaye**, C. Dell, and H. Lin. 2007. Denitrification in an agroecosystem. SSSA Annual Meeting, New Orleans, November.
- Dore, S., M. Montes-Helu, T.E. Kolb, B. W. Sullivan, W. D. Winslow, S. C. Hart, **J. P. Kaye**, G. W. Koch, B. A. Hungate. 2007 Carbon Dioxide and energy exchange in disturbed southwestern ponderosa pine forests. December meeting of American Geophysical Union.
- Fricks, B., **J.P. Kaye**, and R. Siedel. 2007. Abiotic reactions play a role in nitrate retention in three agroecosystems. Presented at the Ecological Society of America meeting, San Jose, August 2007.
- Fricks, B., **J.P. Kaye**, R. Siedel, and P Hepperly. 2007. Historic and present nitrate loss in a long-term cropping systems trial. Presented at the Soil Science Society of America meeting, New Orleans, November 2007.
- McCoy, M.T., A. Adviento-Borbe, **J. P. Kaye**, and M. A. Bruns. 2007, Diversity of *amoA* sequences and comparison of N cycle processes in agricultural soils fertilized with inorganic N or dairy manure. American Society of Microbiology meeting, Toronto, May 2007 and Environmental Chemistry Student Symposium at Penn State.
- Kaye, J.**, M. Kaye, S. Eckert, P. Fule, S. Hart, S. Haase, and K. Prewit. 2006. Accumulation of carbon and nutrients in Ponderosa pine trees during 120 years of fire exclusion. Soil Science Society of America Meetings, Indianapolis, IN.
- Lewis, D., **J. Kaye**, C. Redman, and A. Kinzig. 2006. Importance of historical and present-day land use for the lability of soil C and N. World Congress of Soil Science, Philadelphia, PA.
- Lewis, D., **J. Kaye**, C. Redman, and A. Kinzig. 2006. Legacies of agriculture in carbon and nutrient pools of arid urban soils. World Congress of Soil Science, Philadelphia, PA.
- Gries, C., C. Bang, J. Briggs, M. Di'Iorio, L. Dugan, R. Erickson, S. Earl, S. Feath, M. Feldner, N.B. Grimm, D. Hope, **J.P. Kaye**, A. Kinzig, C. Kochert, A. Majumdar, C. Redman, E. Shock, Q. Stewart, L. Taylor-Taft, J. Walker, J. Stutz, M. Tseng, S. Whitcomb, X. Zhuo. Survey200: CAP LTER's approach to extensive field monitoring. Central Arizona Phoenix LTER All Scientists Meeting, Tempe, AZ.
- Hall, S. N. Grimm, **J. Kaye**, and J. Allen 2006. Ecosystem response to the urban atmosphere in the Sonoran Desert. Ecological Society of America Meetings, Memphis, TN.

- Lewis, D. and **J. Kaye**. 2006. Response of soil carbon pools and fractions to a century of land use change. Ecological Society of America Meetings, Memphis, TN
- Montes-Helu, M.C., S. Dore, B. Sullivan, S. Hart, J. Kaye, W. Winslow, G. Koch, B. Hungate, and T. Kolb. 2006. Carbon Fluxes in Disturbed Southwestern Ponderosa Pine Forests. Ameriflux Annual Meeting, Boulder, CO.
- Sponseller, R., S. Hall, N. Grimm, **J. Kaye**, J. Allen, D. Huber, J. Riddell, Q. Stewart, C. Kochert, and A. Ghimire. 2006. Effects of the urban atmosphere on ecosystem processes in the Sonoran desert: Initial patterns. LTER All Scientists Meeting Estes Park, CO.
- Richard, T., E. Wheeler, G. Varga, **J.P. Kaye**, and M.A. Bruns. 2005. Strategies for reducing gas emissions from dairy farms. Penn State Dairy Cattle Nutrition Workshop, Grantville, PA.
- Horn, K, Johns, T., and **J.P. Kaye**. 2005. Nitrogen dynamics in ponderosa pine stands infested with bark beetles. Ecological Society of America, Montreal, Quebec.
- Kaye, J.P.**, A. Majumdar, C. Gries, D. Hope, W. Zhu, N. Grimm, D. Jenerette, and L. Baker. 2005. The spatial distribution of soil carbon and nitrogen in a regional matrix of urban, agricultural, and desert ecosystems. Ecological Society of America, Montreal, Quebec.
- Hungate, B. S. Hart, **J.P. Kaye**, G. Koch, and T. Kolb. 2005. Ecological restoration of western forests: a win-win for fire and carbon management? AAAS Rocky Mountain Region, Tucson, AZ.
- Kaye, J.P.**, Romanya, J. and R. Vallejo. 2005. Carbon sequestration following stand replacing fires in Spanish woodlands. USDA Greenhouse Gas Symposium, Baltimore, MD.
- Grimm, N.B., **J.P. Kaye**, S.J. Hall, J.O. Allen, and D.B. Lewis. 2004. A distinct urban biogeochemistry? Ecological Society of America, Portland, OR and CAP LTER Research Symposium, Tempe, AZ.
- Briggs, J.M., M. Hegmon, **J.P. Kaye**, K.W. Kintigh, K.A. Spielman, and A.T. Smith. 2004. Legacies on the landscape: Integrating ecology and archaeology to understand long-term human-ecosystem interactions. Ecological Society of America, Portland, OR.
- Hope, D. C. Gries, P. Warren, M. Katti, G. Stuart, W. Zhu, J. Oleson, and **J.P. Kaye**. 2004. How do humans restructure the biodiversity of the Sonoran desert? Southwest Deserts Conference, Tucson, AZ.
- Hart, S.C., S.I. Boyle, **J.P. Kaye**, D.R. Guido, J. Thomas. 2003. Long-term effects of restoration on the function of a ponderosa pine - bunchgrass ecosystem. Southwest Fire Initiative, Flagstaff, AZ and U.S. Soil Ecology Conference, Palm Springs, CA.
- Thomas, J, S.I. Boyle, D. R. Guido, S.C. Hart, and **J.P. Kaye**. 2003. Long-term effects of restoration on soil respiration in a ponderosa pine – bunchgrass ecosystem. Arizona – Nevada Academy of Sciences, Flagstaff, AZ.
- Thomas, J., S.C. Hart, **J.P. Kaye**, D.R. Guido, and S.I. Boyle 2003. Long-term effects of restoration on soil respiration and net N mineralization and nitrification in a ponderosa pine-bunchgrass ecosystem. Southwest Fire Initiative, Flagstaff, AZ.
- McCulley, R. and **J.P. Kaye**. 2003. Soil microbial communities in urban ecosystems compared to nearby native grasslands and agriculture. CAP-LTER Research Symposium. Tempe, AZ.
- Kaye, J.P.** and I.C. Burke. 2002. Carbon fluxes in an urban ecosystem compared to adjacent grasslands and agriculture. Ecological Society of America, Tucson, AZ.
- Hart, S.C., **J.P. Kaye**, W.W. Covington, P.Z. Fulé, and M.M. Moore. 2002. Water, nutrient, and carbon fluxes following ecological restoration of southwestern ponderosa pine forests. Ecological Society of America, Tucson, AZ.
- Guerschman J.P., **J.P. Kaye** and I.C. Burke 2002. Land cover classification in an urban-rural gradient with Landsat TM data using a combination of hard and soft classifier methods. Int. Symposium on Remote Sensing of the Environment, Buenos Aires, Argentina.
- Kaye, J.P.** and D. Binkley. 2001. Non-labile soil nitrogen accumulation during primary floodplain succession. Soil Science Society of America, Charlotte, N.C.
- Burke, I.C., **J.P. Kaye**, S. Bird, S. Hall, R. McCulley, and G. Sommerville 2001. Evaluating and testing models of terrestrial biogeochemistry: The role of temperature in controlling decomposition. Institute of Ecosystem Studies, Cary Conference IX, Millbrook, NY.

- Kaye, J.P.**, R.C. Resh, M.W. Kaye, and R. Chimner 1999. Interactions among C, N, and P cycles in mixed stands of *Eucalyptus* and *Albizia*. Ecological Society of America, Spokane, WA.
- Hart, S.C., W.W. Covington, M.M. More, P.Z. Fule, and **J.P. Kaye** 1998. Historical reconstruction of structure and function of ponderosa pine/bunchgrass ecosystems. Ninth North American Forest Soils Conference.
- Kaye, J.P.** and S.C. Hart. 1997. Succession and restoration effects on soil respiration in a ponderosa pine-bunchgrass ecosystem. Soil Science Society of America, Anaheim, CA.
- Kaye, J.P.** and S.C. Hart 1997. Postsettlement tree invasion alters belowground processes in a ponderosa pine-bunchgrass community. Ecological Society of America, Albuquerque, NM.
- Boone, R.D. K.J. Nadelhoffer, **J.P. Kaye**, and R.D. Bowden 1994. Biological and physical controls on soil organic matter storage: the DIRT experiment. International Ecology Meeting, Manchester, UK.
- Canary, J.D, R.D. Boone, K.D. Nadelhoffer, R.D. Bowden, and **J.P. Kaye** 1996. Estimates of above- and belowground litter inputs to a forest soil using CO<sub>2</sub> fluxes as measured by two methods. Ecological Society of America, Providence, RI.
- Kaye, J.P.** and S.C. Hart 1996. Alteration of the nitrogen cycle following ecological restoration of a ponderosa pine forest. Ecological Society of America, Providence, RI.
- Nadelhoffer, K.D., R.D. Boone, J.D. Canary, and **J.P. Kaye** 1995. Effects of temperature on tree root and microbial respiration in a temperate forest soil. Soil Science Society of America, St. Louis, MO.

#### **INVITED SEMINARS**

- Kaye, J.P.** 2008. Legacies in soils and in scientists. Colorado State University, Graduate Degree Program in Ecology, Distinguished Alumni Seminar, October 2008 (scheduled).
- Kaye, J.P.** 2008. Tradeoffs between fire management and carbon storage in ponderosa pine forests. School of Forest Resources, Penn State.
- Kaye, J.** 2008. Ghosts of agriculture past in the soils of Phoenix, Arizona. University of Pennsylvania, Philadelphia, PA.
- Kaye, J.P.** 2007. Ghosts of agriculture past in the soils of Phoenix, Arizona. Cornell University, Ithaca, NY.
- Hall, S., N. Grimm, **J.P. Kaye**, J. Allen, and D. Lewis. 2006. Ecosystem Responses to Urbanization Across the Central Arizona-Phoenix (CAP) LTER Site. American Geophysical Union, Baltimore, MD.
- Kaye, J.P.** 2006. Will urban ecology lead to new ecological theory or just new field sites? University of Pittsburgh, Pittsburgh, PA.
- Kaye, J.P.** 2005. Will ecologists or geochemists make the next big discoveries in the nitrogen cycle? Pennsylvania State University Inter-College Degree Program in Ecology, University Park, PA.
- Kaye, J.P.** 2004. Linking land management to nitrogen dynamics at regional to microbial scales. Pennsylvania State University. University Park, PA.
- Kaye, J.P.** 2003. From fire suppression to prescribed fire in southwestern ponderosa pine forests. Jornades sobre Incendis Forestals i Recerca. Solsona, Spain.
- Kaye, J.P.** 2003. Urban ecosystem ecology in Colorado and Arizona. Northern Arizona University, Flagstaff, AZ.
- Kaye, J.P.** 2002. The changing nitrogen cycle of terrestrial ecosystems, Arizona State University, Tempe, AZ.
- Kaye, J.P.** 2002. Restoring ecosystem function to ponderosa pine forests after 120 years of fire suppression. University of Alicante, Spain.
- Kaye, J.P.** 2001. The changing nitrogen cycle of terrestrial ecosystems. University of Utah, Salt Lake City, UT.
- Kaye, J.P.** 2000. Controls on soil nitrogen retention: diving into recalcitrant pools. Cornell University, Ithaca, NY.

**Kaye, J.P.** 2000. Controls on soil nitrogen retention: diving into recalcitrant pools. Institute of Ecosystem Studies, Millbrook, NY.

**PRE-PUBLICATION AND PROPOSAL REVIEWER FOR:**

Biogeochemistry, Canadian Journal of Forest Research, DOE – NICCR, Ecology, Ecological Applications, Ecological Monographs, Ecosystems, Forest Ecology and Management, National Science Foundation (Ecosystems and International Programs), Nature, Oecologia, Plant and Soil, Soil Science Society of America Journal, Tree Physiology, Tropical Ecology, Urban Ecosystems, USDA NRI Managed Ecosystems Program, USDA NRI Soil Processes Program

**EDITORIAL BOARD**

Oecologia, 2005-present

**MEMBERSHIP**

Ecological Society of America; Soil Science Society of America; American Geophysical Union; American Institute of Biological Sciences

**ADVISORS**

M.S.: Dr. Stephen C. Hart; Ph.D.: Dr. Dan Binkley

**ADVISEES (MY STUDENTS AND POSTDOCS)**

Julie Weitzman, M.S. Soils, began Fall 2009  
Rachel Brimmer, Ph.D. Soils, began Fall 2008  
Allison Madison, M.S. Ecology, began Fall 2008  
Andrew Wreschnig, undergraduate REU student, summer 2008  
Lauren Seiler, undergraduate honors thesis, began spring 2008  
Michelle Knabb, undergraduate research assistant, began fall 2007  
Marshall McDaniel, Ph.D. Soils, began Fall 2007  
Catherine Pierce, undergraduate research assistant, began spring 2007  
Krystal Bealing, undergraduate research assistant, began summer 2006  
Mike Castellano, Ph.D. Soils, began fall 2006  
Chris Ross, M.S. Ecology, completed summer 2008  
Kristine Jimenez, undergraduate research assistant, winter 2005 – fall 2007  
Amanda Conover, undergraduate research assistant, winter 2005 – spring 2007  
Matt McCoy, M.S. Soils, began fall 2005  
Michelle Gresalfi, M.S. Ecology, completed spring 2007  
Barbara Fricks, M.S. Soils, completed summer 2007  
Arlene Adviento-Borbe, Postdoc, began summer 2006  
David Lewis, Postdoc., began fall 2005  
Tracy Johns, M.S., ASU, completed spring 2006  
Kari Morehouse, M.S., ASU, completed summer 2005  
James Gunn, undergraduate research assistant, ASU, 5/04 to 9/04  
Merry Spradling, undergraduate research assistant, ASU, 8/04 to 12/04  
Kelly Balcarczyk, undergraduate research assistant, ASU, summer 2003  
Sarah Shaffer, undergraduate honors thesis, CSU, completed 2002.  
Laura Straup, undergraduate research assistant, CSU, completed 2001.

**ADVISEES (I serve on the graduate committee of these students)**

Danielle Andrews, Ph.D., Soils, in progress  
Anna Starovttoyov, M.S., Ecology, in progress

Justine Cook, M.S., Agronomy, in progress  
 Dan Heggenstaller, M.S., Forest Sciences, in progress  
 David Verbee, M.S., Agronomy, in progress  
 Katherine Gordon, M.S., Ecology, in progress  
 Aaron Diefendorf, Ph.D., Geosciences, in progress  
 Kevin Mueller, Ph.D., Ecology, in progress  
 Marlyse Williams, Ph.D., Ag and Bio Engineering, in progress  
 Ashlee Dere, M.S. Soils, in progress  
 Marc Goebel, Ph.D., Ecology, in progress  
 Qing Zhu, Ph.D., Soil Science, in progress  
 Robert D. Cameron, Ph.D., Horticulture, in progress  
 Dawn Sedorovich, Ph.D., Ag and Bio Eng., completed winter 2007  
 Jessica Moon, Ph.D., Ecology, in progress  
 Joshua Kucharski, M.S., Horticulture, left program.  
 Jenny Marie Edwards, M.S. Horticulture, completed fall 2005  
 Jennifer Harden, M.S., ASU, completed 12/04  
 Tamara Harms, M.S. ASU, completed 5/04

### **TEACHING EXPERIENCE**

PSU	SOILS071 GN IL	Environmental Sustainability (3 credits)
PSU	ECLGY597B	Advances in Ecology (3 credits; team taught course)
PSU	AGECO197B	Environmental Sustainability (3 credits)
PSU	SOILS597A	Ecosystem Nutrient Cycles (3 credits)
PSU	SOILS597B	Soil Properties and Functions (3 credits; team taught course)
ASU	BIO491/594 GLG 490/598	Soil Ecology (4 credits with lab)
ASU	BIO491	Stable Isotopes in Ecological Research (1 credit)
ASU	BIO491/594	Global Change Biology (2 credits)
ASU	BIO594 - IGERT workshop	Social/Environmental Aspects of Irrigation Systems (3 credits)
ASU	BIO314/414	Biology and Society Research Colloquium (3 credits)
ASU	BIO311	Biology and Society (3 lectures in team taught course)

### **TEACHING SKILLS DEVELOPMENT**

Fall 2002. Rookie Camp. A one-semester, weekly course offered by the ASU Center for Learning and Teaching Excellence to promote the use of cooperative learning methods in the classroom.

### **AWARDS RECEIVED BY STUDENTS THAT I ADVISE**

Michael Castellano, 1<sup>st</sup> place oral presentation in the Agricultural Sciences section,  
 Environmental Chemistry Student Symposium, Spring 2008  
 Chris Ross, 2<sup>nd</sup> place oral presentation in the Biogeochemistry section, Environmental Chemistry  
 Student Symposium, Spring 2008  
 Amanda Conover, College of Agricultural Sciences Undergraduate Research Grant, Fall 2006  
 Barbara Fricks, Center for Environmental Chemistry and Geochemistry Summer Research  
 Fellowship, Summer 2006.

Amanda Conover, 5<sup>th</sup> place poster, Gamma Sigma Delta Undergraduate Student Research Symposium, Spring 2007.

Matt McCoy, 2<sup>nd</sup> place poster, Environmental Chemistry Student Research Symposium, Spring 2007.

Kristine Jimenez, College of Agricultural Sciences Undergraduate Research Grant, Spring 2007.

Barbara Fricks, Congressional Science Intern, Soil Science Society of America, Summer 2007-present.

Michael Castellano, NOAA Graduate Research Fellowship, 2006-2009.

### **PROFESSIONAL SERVICE**

Committee to create a Human Dimensions of Natural Resources Dual Degree Graduate Program, Fall 2007-present

Committee to evaluate a merger of the ERM and ESoils majors, Spring 2008-present

Program Review Committee, Environmental Resource Management Major, Fall 2006 –Fall 2007

Advisory Committee, Department of Crop and Soil Sciences, Fall 2005 to present

Speaker Series Committee, Environment and Natural Resources Institute, Fall 2006 - present

Speaker Series Committee, Critical Zone Research Initiative, Fall 2006 - present

Faculty and Student Affairs Committee, Department of Crop and Soil Sciences, 2005 - 2006

Instrument Services Lab Committee, Department of Crop and Soil Science, Fall 2005 to present

NSF LTER Coordinating Committee representative from CAP LTER, Fall 2005

NSF LTER Executive Committee representative from CAP LTER, Fall 2005

NSF LTER Conference Committee for Cross-Site Research, Fall 2005 to Fall 2007